Statement of Work for the Development of Problem/Idea/Information App for SFOE

CodeArray Technologies

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1 Executive Summary

Introduction

SFOE has requested CodeArray Technologies to design, develop and implement the Problem/Idea/Information App in both Android and iOS and submit a fixed bid Statement of Work for the development of application.

Solution Overview

CodeArray is pleased to present this SoW to deliver the Problem/Idea/Information, at one time fixed cost to SFOE. This SoW discusses the following:

- Scope of work
- Effort required to complete the development
- Cost and commercial terms

Financials

The job, as mentioned under 'Scope' in Section 2 below, shall attract a firm and fixed bid price of **INR 25,00,000** as detailed in section 5 below.

2   PROBLEM/IDEA/INFORMATION APP - Details

System Overview

The scope of the project is to design and develop the Problem/Idea/Information App. The system should be fully mobile responsive with modular design so as to allow for future additions of features, functionality with relative ease.

The scope refers to the business requirements provided by SFOE and subsequent discussions with SFOE.

Scope / Functional requirements

The Features will be developed according to the requirements discussed with SFOE to enable them to execute their routine tasks related to Problem/Idea/Information App. The scope will be:

Problem/Idea/Information App:

1. Total Analysis
2. UX-Design of the Mobile Application
3. Environment Setup
4. Register/Login Module
5. Role Based Module
6. Problem/Idea/Information/ Submission
7. Problem/Problem Solution Submission
8. Evaluation Mechanism for Problem/Idea/Information/Problems.
9. Collaboration Tools
10. Corporate Collaboration
11. Notifications
12. User Profile Management
13. Email/SMS Integration
14. Payment Gateway Integration
15. Web Panel – Admin Login

Project Execution

We propose the development of a cutting-edge Problem/Idea/Information Mobile Application.

The project will involve UI design, frontend development, and backend development to ensure a user-friendly experience, robust functionality, and secure data handling.

1. Design UX - Web and Mobile App

-   User-friendly interface for seamless navigation and enhanced user experience.
-   Responsive design ensuring compatibility across various devices and screen sizes.

2. Environment Setup

- Configuring the application environment for efficient performance and scalability.
- Implementing necessary infrastructure for smooth operation and management.

3. Role-based Module (Admin/Users)

Admin Panel
- Incorporate analytics tools to track user engagement, idea submission/problem submission trends, and platform usage.

User Panel
- Registration and login functionality.
- Profile management including personal information.

4. Push Notifications

- Users should receive notifications about updates on their submitted ideas, feedback, and reward status.

5. Payment Gateway Integration

- Secure and seamless payment processing for online transactions.
- Support for various payment methods including credit/debit cards, digital wallets, and bank transfers.
- Integration with popular payment gateways ensuring reliability and trustworthiness.

6. Register/Login Module

- User registration with email or phone number.
- Forgot password/reset password functionality for user account recovery.

7. Problem/Idea/Information/Problem Module

- Users should be able to submit new ideas/information/share problems through a user-friendly interface
- The forms should include fields for title, description, and supporting materials.
- Ideas should be categorized and tagged appropriately for easy discovery.

8. Evaluation Mechanism

- Administrators and designated experts should be able to review submitted ideas/information/problems.
- Admin should be able to provide feedback and comments on ideas.

10. Collaboration Tools

- Integrate collaboration tools such as document sharing, task assignment, and real-time messaging.

11. Corporate Collaboration – Will be discussing this further.

Delivery Model

Agile Delivery Model: Navigating Change with Flexibility and Collaboration

Agile Delivery Model with Release and Sprint Planning
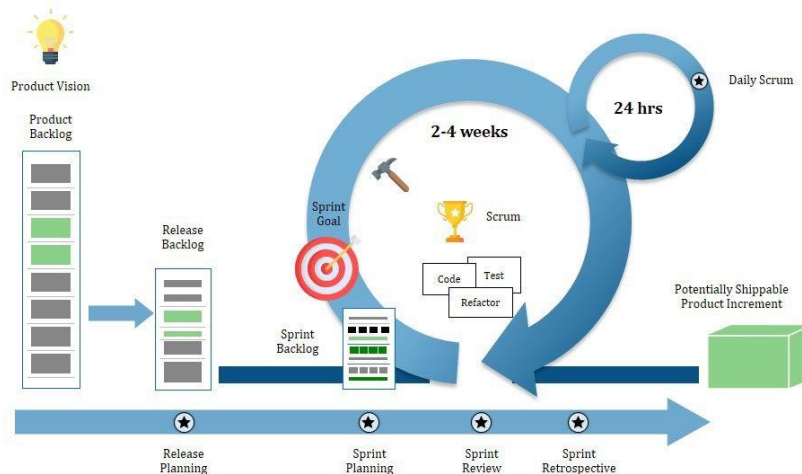
The Agile delivery model is a dynamic and iterative approach to software development and project management that prioritizes flexibility, collaboration, and customer satisfaction.

1. Iterative Development

a. Agile promotes incremental development through short, time-boxed iterations known as sprints.

b. At the end of each sprint, a potentially shippable product increment is delivered, allowing for continuous feedback and improvements.

2. Customer Collaboration

a. Customer feedback is incorporated throughout the development process to ensure the end product aligns with user needs and expectations.

3. Scope Creeps

a. Agile's flexibility can sometimes lead to scope creep if changes are not properly managed.

b. Clear communication and prioritization are essential to mitigate this risk.

Product backlog will be prepared based on the requirements shared and the ones mentioned in the scope section. Any changes to the scope will be notified to the customer and revised estimates will be shared.

Out of Scope Work

Any new request made by SFOE may have an impact on the project cost and timelines. Below are few examples:

- Changes or Addition of new features not already included
- Application Hosting on Code Array Server
- Hardware equipment like servers, printers, smart cards etc.
- Network and database administration
- Systems Engineering
- OS & Server license and other software upgrades
- Payment Gateway, SMS Gateway and Azure storage licensing costs

System Architecture

Application Component Diagram
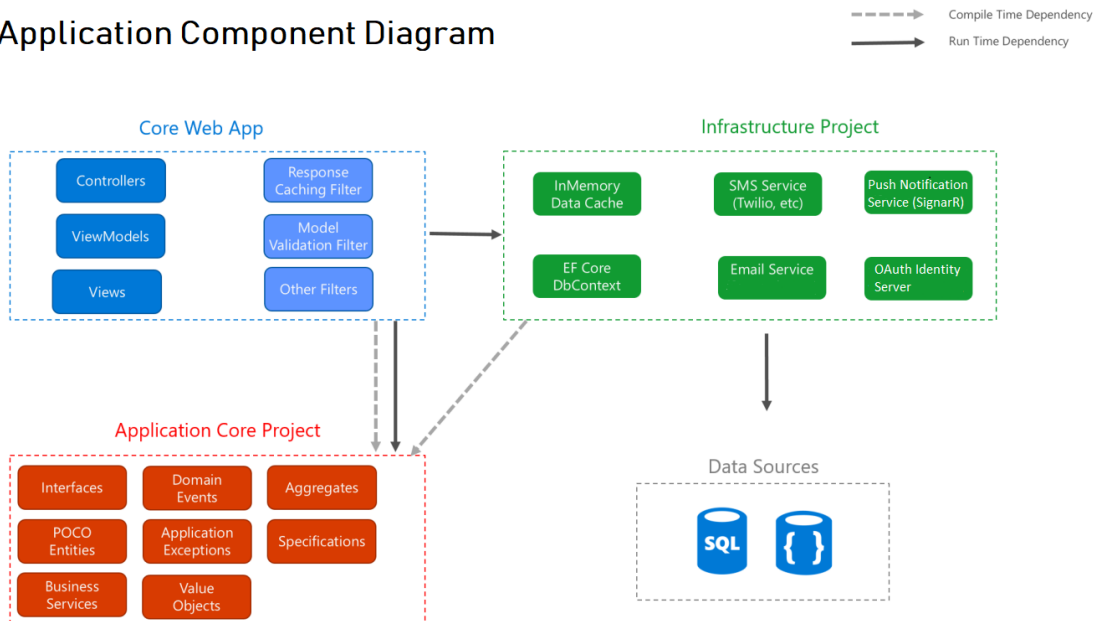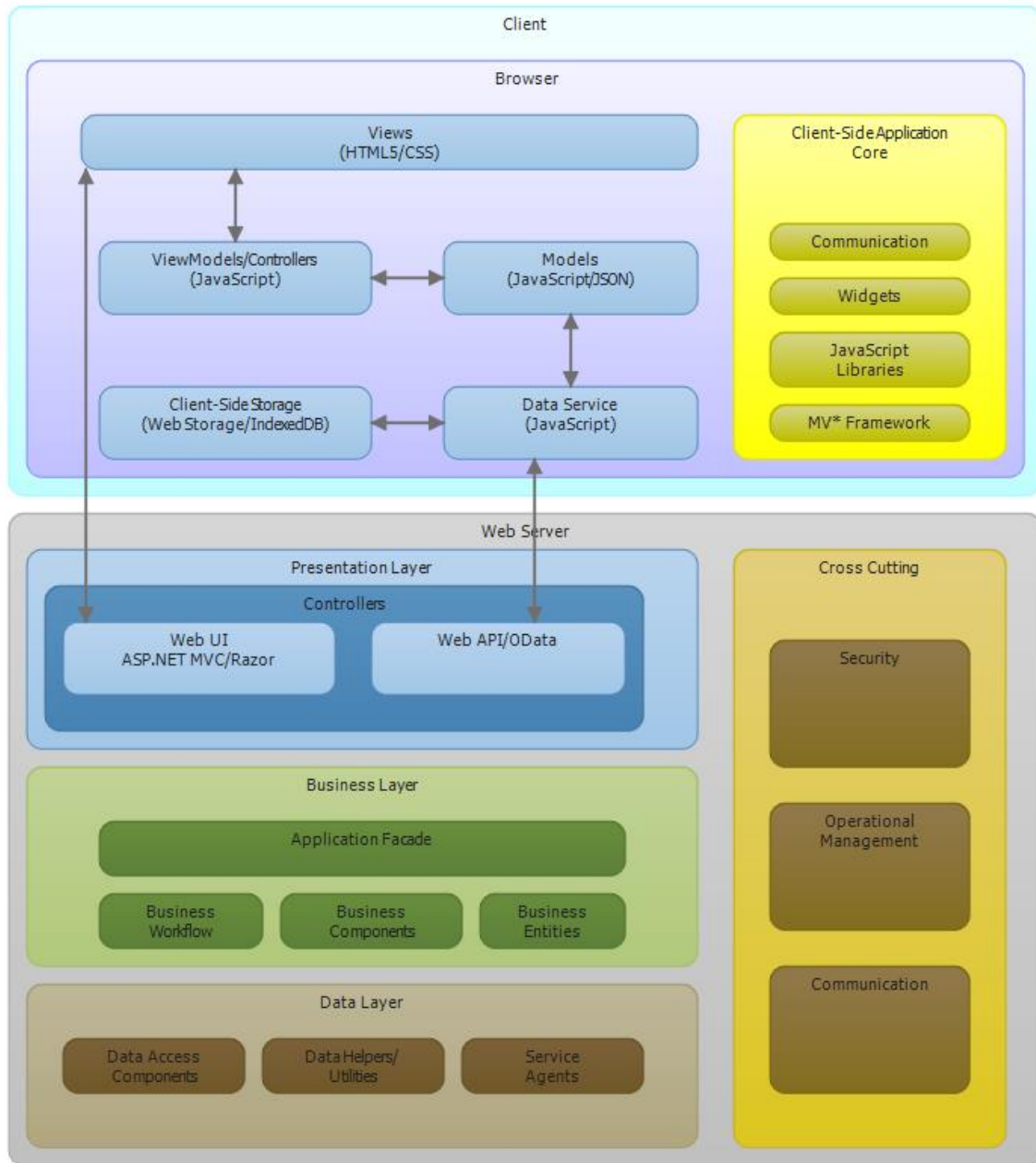
Application Authentication Architecture
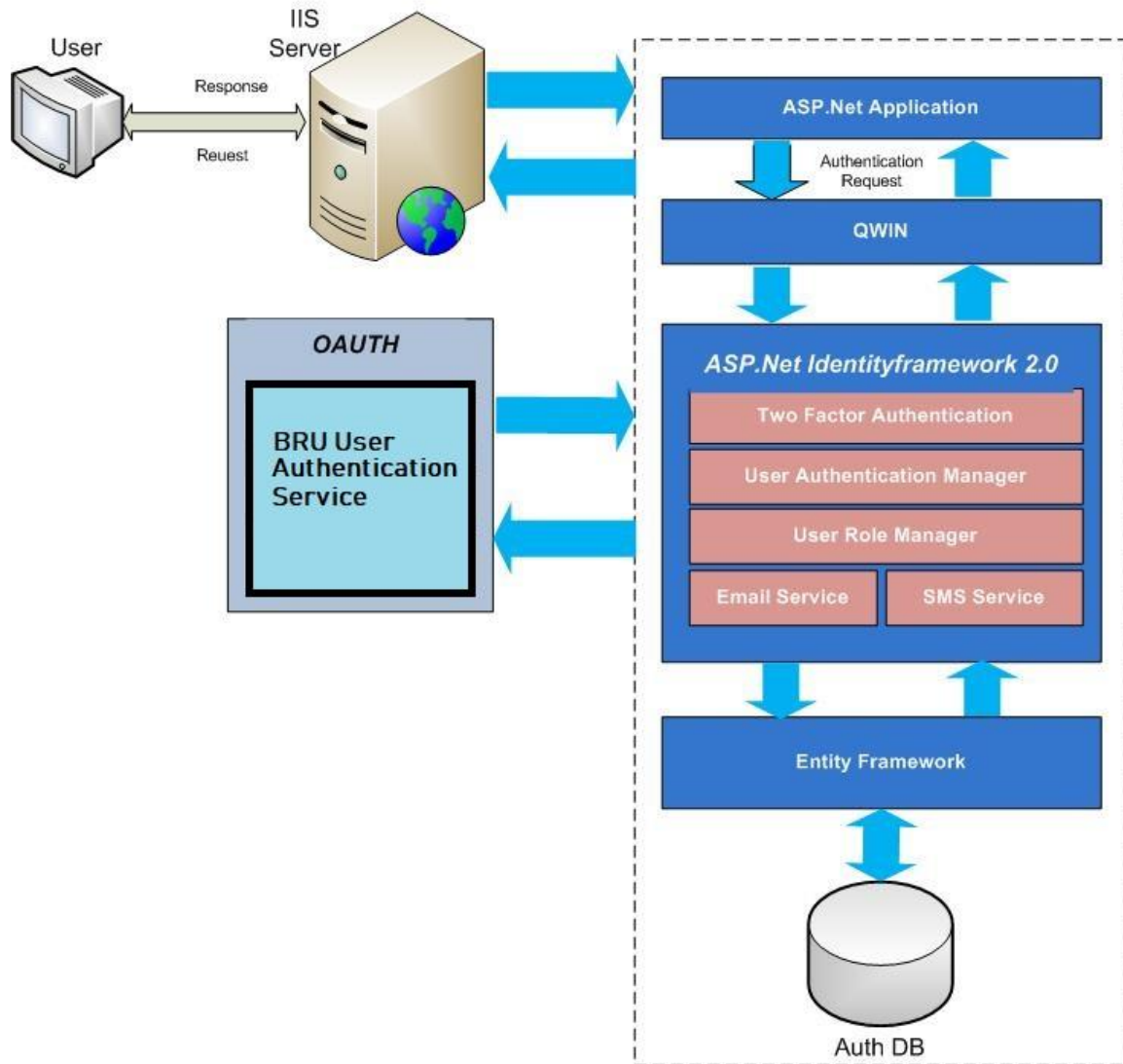
Technical Advantages

The new application will be developed in Windows/Linux Server, .Net Core for APIs, PGSQL for Database and ReactJS for Web UI and React Native for App UI will have the following technical advantages

- Easy maintainability
- Scalability
- High availability
- Accessible from anywhere
- Responsive User Interface.

3   Project Structure and Governance

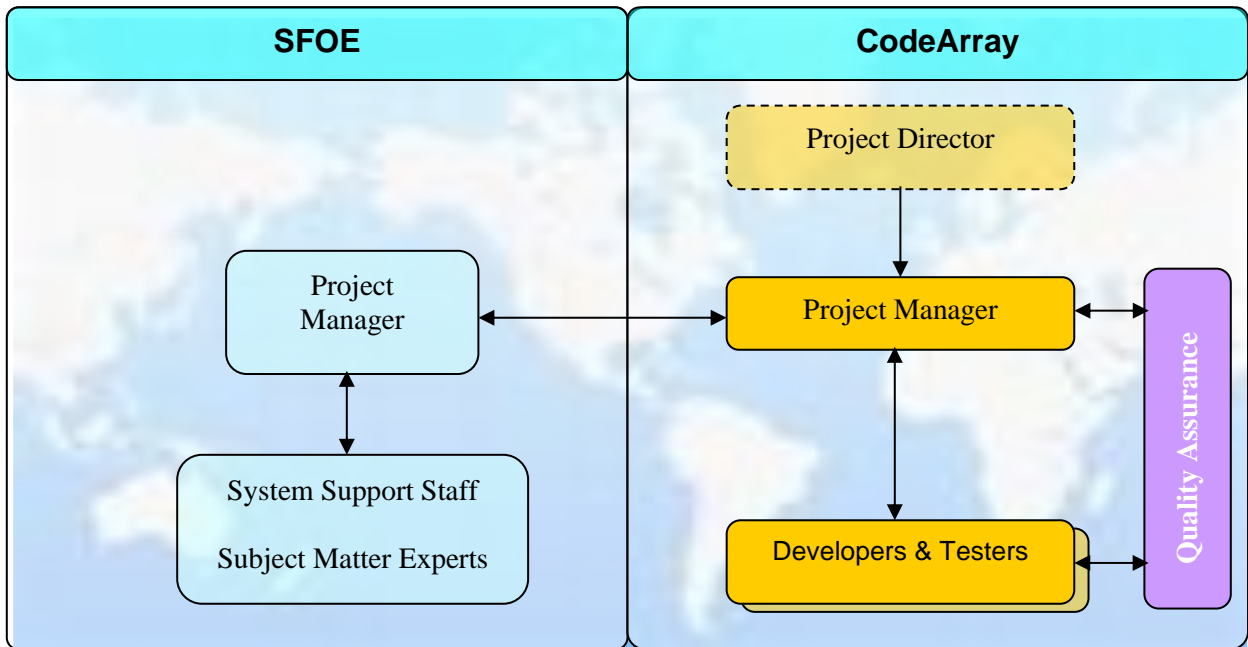This section lays down the project management structure and responsibilities of both CodeArray and SFOE for successful project implementation

Project Organization Structure

CodeArray proposes the following Project Organization Structure for the development project with SFOE by creating a joint team staffed with members from both CodeArray and SFOE.

CodeArray Responsibilities

This section provides details of the roles and responsibilities for various members as proposed in the team structure above.

Project Director

- Review the progress of the project in monthly Senior Management Review Meeting
- Resolve any critical issues which could not be resolved by the Project Manager and requires further escalation

Project Manager

Work as a single point of contact for all activities relating to deliveries and acceptance. Responsibilities include planning, coordinating and ensuring that the team delivers as per defined schedule and expected quality.

Activities include:

- Interact with SFOE's Project Manager, document requirements and acceptance criteria
- Identify resource requirements and technical skills
- Lead Project team
- Project Planning, Scheduling and Tracking
- Maintain / Track the development schedule on daily basis and progress of activities
- Identify access and tools required
- Ensuring availability of staff, hardware, software and other resources required for the project
- Monitor overall project workflow and development schedule to ensure targets deadlines are met and assist other projection team members as needed
- Accountable for all the software life cycle activities of the development like Requirements Gathering and Analysis, PoC, Design, Coding, Test Plan preparation, Testing and Installation
- Ensure conformance with SFOE's Requirements
- Point of escalation
- Conduct continuous process improvements
- Ensuring the Quality of project deliverables
- Liaising with the SFOE to ensure communication and technical support for the project team
- Providing regular status reports
- Support other roles and supervise overall performance

Developers

- Analyze system requirements and existing business processes and information systems
- Interact with Project Manager to develop requirements and acceptance testing
- Coding, testing, debugging and documentation of the programs / system as required
- Accountable for the coding and testing of software as required

Testers

- Prepare Test Plans / Test Cases in line with the system requirements and developed application system
- Interact with Project Manager to develop Test Plans / Cases for Unit Testing, System Testing and Acceptance Testing
- Test execution and documentation of the test results
- Analyze test results and coordinate with developers to track defects to closure
- Accountable for testing of software as required

SFOE Responsibilities

SFOE will assign a Project Manager who will be CodeArray's main point of contact throughout the duration of this engagement. He will coordinate the participation of SFOE's resources in the project (Subject Matter Experts and Systems Support Staff). SFOE would also form a communication channel with CodeArray.
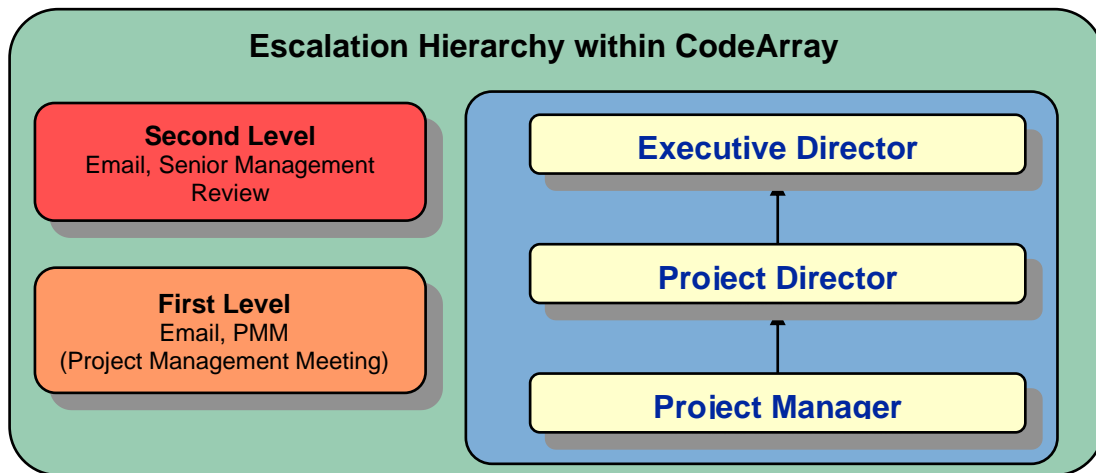
Specific responsibilities of SFOE include

- Ensuring CodeArray development team has the correct understanding of the SFOE's PROBLEM/IDEA/INFORMATION APP.

- Providing CodeArray with access to application and subject matter experts who can be interviewed to obtain overall business functionality and application flow

- Approving all interim and final deliverables / documents

- Providing Acceptance Criteria and approving test plans

- Coordinating the successful acceptance testing

- SFOE will have to procure the licenses, provide technical staff for the installation, configuration and support as per the deadlines mentioned in the final accepted project plan (after Requirement Analysis are signed off).

- SFOE will provide the existing data in the format defined by CodeArray templates for transferring into the new system.

Program Management and Governance

3.1.1 Escalation Hierarchy

SFOE's Project Manager and CodeArray Project Manager will work together and resolve all project issues in a timely manner. In case a satisfactory response is not obtained from either side, issues will be escalated as per the procedures depicted below.

Escalation Hierarchy within CodeArray

Second Level
Email, Senior Management Review

First Level
Email, PMM
(Project Management Meeting)

Executive Director

Project Director

Project Manager

4   Project Change & Risk Management

Project Change Management

Project Change Management

```
[Change Request] ──► ( Evaluate Change Request [Project Manager] )
                               │
                               ▼
                     ( Perform Impact Analysis [Project Manager] ) ──► [Impact Analysis Report]
                               │
                               ▼
                     ( Approve Change [Change Control Board] )
                               │
                               ▼
                     ( Implement Change [Project Manager] )
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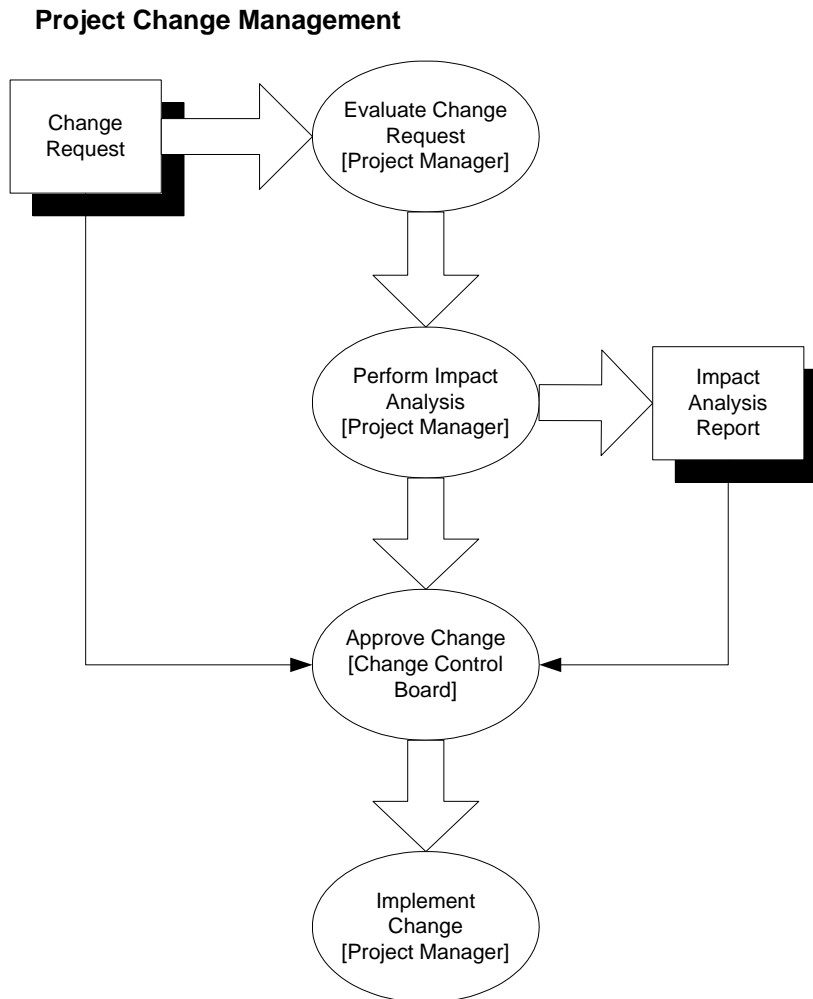
4.1.1   *Evaluate Change Request*

During this phase the Project Manager evaluates the Change Request to determine:

- If the request is a change request
- If the change is related to the scope of the project

Possible outcomes of this phase

- The Change Request is not a valid request
- The Change Request cannot be implemented in the current Schedule, Cost, Quality constraints

- The Change Request warrants a separate Project

In case of the last two outcomes, the Project Manager will present the rationale for rejecting the Change Request to the Change Control Board. The Change Control Board is the ultimate authority to decide what action should be taken.

4.1.2 Perform Impact Analysis

After a Change Request has been evaluated, an impact analysis is performed to determine the extent of change required. During this phase the impact on schedule, effort, cost and quality is also determined. The impact analysis document should contain at least the following information

- Impact on Schedule

- Impact on Cost

- Impact on Quality

4.1.3 Approve Change

The Project Manager presents the Change Request and Impact Analysis to the Change Control Board for approval. If the board approves the Change Request then the Project Manager proceeds to the implementation stage, otherwise the Change Request is denied and the relevant stakeholders are informed of the decision.

4.1.4 Implement Change

The Project Manager updates the Project Plan and other documents to reflect the impact of the Change Request. The new plan and schedule is approved by the Change Control Board and baselined. The Change Request is implemented as per the Project Lifecycle processes.

Risk Management

Project management will focus on early identification of potential risk factors and their resolution. Risk factors will be tracked continuously and timely action will be taken to contain the risk.

The area(s) of potential impact and a plan to mitigate some sample risks is presented in the following table.

Risk Factor	Probability	Impact	Mitigation Strategy
Incomplete / Frequent Change in Requirements	Low	High	• CodeArray Project Manager will work with SFOE Project Manager to gather and document the Requirements • These will be reviewed and approved before moving further with the development
Delay in response to CodeArray's technical queries, requirements and approvals	Medium	Medium	• Communication procedure to be laid down clearly before the project begins • Escalation wherever necessary as per the escalation process
Infrastructure availability at SFOE for deployment	Medium	Medium	• CodeArray will discuss with SFOE the hardware, software, connectivity etc. that will be needed to deploy / install the application
Deliverables not conforming to specified standards or to SFOE's requirements	Low	Medium	• Identification and agreement of documentation templates and standards at the beginning of the project. • These guidelines and templates will be reviewed jointly by CodeArray & SFOE
Availability of SFOE during Acceptance and user training period	Low	Medium	• CodeArray and SFOE Resources to be identified before the project begins and ensure availability of the relevant resources when required
Delays due to break in connectivity / link or any natural calamities	Low	Medium	• CodeArray team to work extra and complete within schedules • Revise schedules in agreement with SFOE
Non-availability of Acceptance Criteria	Low	Medium	• Acceptance Criteria to be defined by SFOE in mutual agreement with CodeArray. These to be signed off during contract signoff

Force Majeure

Neither SFOE nor CodeArray shall be liable to the other for any delay in or failure of performance of their respective obligations under this Proposed Agreement caused by occurrences beyond the control of the SFOE or CodeArray (as the case may be), including fire; floods; acts of God; acts of the public enemy, war; riots, insurrections; labor disturbances; strikes; sabotage; any law, statute or ordinance; order; action or regulations of the governments or any agencies

thereof of the parties to this agreement and/or of this Agreement; any law, statute or ordinance; order; action or regulations of the governments or any agencies thereof of the parties to this agreement and/or of the location where Products and/or Services are to be provided; or in compliance therewith; or any other causes, contingencies or circumstances similar to the above.

5   Commercial Terms

5.1 Pricing

Fixed Pricing

The price of CodeArray's Fixed Bid proposal for the development and implementation of Problem/Idea/Information App is estimated as follows:

Description	Price in INR
Design UX - Mobile App Environment Set-up Misc Services – Payment Gateway, Notifications, SMS Gateway	6,00,000
User Module	10,00,000
Admin Module	4,00,600
Infrastructure Deployment & Releases	5,00,000
Total	**25,00,000**

5.2 Delivery Schedule

Estimated delivery timeline is 24-30 weeks from the date of agreement.

5.3 Payment Schedule

Sr. No	Milestone	%	Amount INR
1	Project Initiation	10%	2,50,000
2	UI/UX Finalization	15%	3,75,000
3	Demo 1	35%	8,75,000
4	Demo 2	35%	8,75,000
5	Production Release	5%	1,25,000
Total			**25,00,000**

Pricing Assumptions

The following details some assumptions during the pricing of the fixed bid proposal.

a. The scope of the assignment as defined and mentioned in this SoW. Any changes to the approved requirements after the requirement analysis phase would undergo the change management process and the cost will be charged additionally.

b. Extension of an activity during any phase beyond the agreed planned schedule, for reasons not attributed to CodeArray, will be charged separately.

c. It is imperative that both parties (User – SFOE and CodeArray) adhere to timelines scheduled for all approvals and clarifications in order to confirm to the fixed bid timelines. Delays at any stage will impact the overall project schedule and cost.

d. Changes to any of the technical and other general assumptions listed in the SoW (agreed between both SFOE and CodeArray) will affect the total cost of development.

Note:

- All other services, would be considered as 'T&M Services' and charged on a time and cost basis
- Payment for 'T&M Services' would be payable within 15 days of receipt of CodeArray's invoice by the SFOE. The 'T&M Services' invoices would be prepared on a monthly basis.

Warranty

CodeArray extends a standard product warranty for 3 months from the date of implementation of the PROBLEM/IDEA/INFORMATION APP provided no alterations are made to the deployment profile and configuration of the product without the knowledge / permission CodeArray.

The warranty covers only fixing of bugs reported time to time and does not include maintenance of the server in which the PROBLEM/IDEA/INFORMATION APP is deployed.

- Support for products beyond this warranty period will be available against Annual Support contracts, and would be conditional on customer upgrading the software to the then current supported versions.

- CodeArray's support for customized software will be available only on time and cost basis once they are commissioned. On a case-to-case basis, support contracts can be agreed upon for such custom software.

On expiry of the Warranty, SFOE is advised to enter into an Annual Maintenance Contract (AMC) with CodeArray to ensure full and effective support of PROBLEM/IDEA/INFORMATION APP. If desired by SFOE, then CodeArray shall submit a separate proposal that will detail the AMC scope and pricing.

For SFOE	For CodeArray Technologies Pvt. Ltd
Signature:	**Signature:**